B. Claims

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1-20. (Cancelled)

21. (Currently Amended) ~~The method according to claim 1~~ A method for acquiring information in relation to a device, which comprises a substrate and a plurality of biological materials disposed on a surface of the substrate, wherein the information is acquired from the surface using time of flight secondary ion mass spectrometry, the method comprising at least the steps of:

irradiating a pulsed primary ion beam on different positions of the surface of the device in a discontinuous pattern, which is a specifically programmed or a random pattern to suppress an influence of a charge-up of an irradiated area, wherein the irradiated area with the primary ion beam in one scan is not duplicated, and the primary ion beam has a beam size of a smaller area than an area to be measured on the surface of the device;

conducting mass-analysis of secondary ions via time of flight, the secondary ions being generated by irradiating the pulsed primary ion beam; and

reconstructing analyzed results obtained by conducting the mass-analysis to form two-dimensional information on the basis of the pattern of the irradiating pulsed primary ion beam,

wherein a volumetric resistivity of the substrate is not less than 10^{10} ohm·cm [[(]] at 300K[[)]].

22. (Currently Amended) ~~The method according to claim 1, wherein~~ A method for acquiring information in relation to a device, which comprises a substrate and a plurality of biological materials disposed on a surface of the substrate, wherein the information is acquired from the surface using time of flight secondary ion mass spectrometry, the method comprising at least the steps of:

irradiating a pulsed primary ion beam on different positions of the surface of the device in a discontinuous pattern, which is a specifically programmed or a random pattern to suppress an influence of a charge-up of an irradiated area, wherein the irradiated area with the primary ion beam in one scan is not duplicated, the primary ion beam has a beam size of a smaller area than an area to be measured on the surface of the device, and a diameter of the primary ion beam is not larger than 10 μm;

conducting mass-analysis of secondary ions via time of flight, the secondary ions being generated by irradiating the pulsed primary ion beam; and

reconstructing analyzed results obtained by conducting the mass-analysis to form two-dimensional information on the basis of the pattern of the irradiating pulsed primary ion beam.

23. (Currently Amended) ~~The apparatus according to claim 20~~ An apparatus for acquiring information in relation to a device, which comprises a substrate and a plurality of biological materials disposed on a surface of the substrate, wherein the information is acquired from the surface using time of flight secondary ion mass spectrometry, the apparatus comprising at least:

a means for irradiating pulsed primary ion beam on the surface of the device in a discontinuous pattern, which is a specifically programmed or a random pattern to suppress an influence of a charge-up of an irradiated area, wherein the irradiated area with the primary ion beam in one scan is not duplicated, and the primary ion beam having a beam size of a smaller area than an area to be measured on the surface of the device;

a means for conducting mass-analysis of secondary ions via time of flight, the secondary ions being generated by irradiating the pulsed primary ion beam; and

a means for reconstructing analyzed results obtained by conducting the mass-analysis to form a two-dimensional information on the basis of the pattern of the irradiating pulsed primary ion beam,

wherein a volumetric resistivity of the substrate is not less than 10^{10} ohm·cm [[(]] at 300K[[)]].

24. (Currently Amended) ~~The apparatus according to claim 20, wherein~~ An apparatus for acquiring information in relation to a device, which comprises a substrate and a plurality of biological materials disposed on a surface of the substrate, wherein the information is acquired from the surface using time of flight secondary ion mass spectrometry, the apparatus comprising at least:

a means for irradiating pulsed primary ion beam on the surface of the device in a discontinuous pattern, which is a specifically programmed or a random pattern to suppress an influence of a charge-up of an irradiated area, wherein the irradiated area with the primary ion beam in one scan is not duplicated, the primary ion beam having a beam

size of a smaller area than an area to be measured on the surface of the device, and a diameter of the primary ion beam is not larger than 10 μm;

a means for conducting mass-analysis of secondary ions via time of flight, the secondary ions being generated by irradiating the pulsed primary ion beam; and

a means for reconstructing analyzed results obtained by conducting the mass-analysis to form a two-dimensional information on the basis of the pattern of the irradiating pulsed primary ion beam.

25. (New) The method according to claim 21, wherein an ion species of the primary ion beam is a gold ion (Au^+, Au_2^+, Au_3^+).

26. (New) The method according to claim 21, wherein the device is a chip on which the biological materials are disposed.

27. (New) The method according to claim 26, wherein one of the biological materials is a nucleic acid.

28. (New) The method according to claim 26, wherein one of the biological materials is a protein.

29. (New) The method according to claim 27, wherein the secondary ion species generated by the primary ion beam includes at least a species derived by fragmentation and ionization of a phosphate backbone derived from the nucleic acid.

30. (New) The method according to claim 29, wherein the secondary ion species generated by the primary ion beam includes at least any one of P^-, PO^-, PO_2^- and PO_3^-.

31. (New) The method according to claim 22, wherein an ion species of the primary ion beam is a gold ion (Au^+, Au_2^+, Au_3^+).

32. (New) The method according to claim 22, wherein the device is a chip on which the biological materials are disposed.

33. (New) The method according to claim 32, wherein one of the biological materials is a nucleic acid.

34. (New) The method according to claim 32, wherein one of the biological materials is a protein.

35. (New) The method according to claim 33, wherein the secondary ion species generated by the primary ion beam includes at least a species derived by fragmentation and ionization of a phosphate backbone derived from the nucleic acid.

36. (New) The method according to claim 35, wherein the secondary ion species generated by the primary ion beam includes at least any one of P^-, PO^-, PO_2^- and PO_3^-.